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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,376	07/17/2003	Tomokazu Hayashi	10517/173	9710

23838 7590 03/12/2007  
KENYON & KENYON LLP  
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WASHINGTON, DC 20005

EXAMINER
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YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/620,376

Applicant(s)

HAYASHI ET AL.

Examiner

Dah-Wei D. Yuan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**SEAL STRUCTURE OF FUEL CELL UNIT  
AND MANUFACTURING METHOD OF THE SAME**

Examiner: Yuan

S.N. 10/620,376

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March 8, 2007

**Detailed Action**

1. The Applicant's Request for Reconsideration filed on December 28, 2006 was received.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on August 16, 2006.

***Claim Rejections - 35 USC § 102***

3. The claim rejections under 35 U.S.C.102(e) as being anticipated by Inoue et al. (US 2001/0044042 A1) on claims 1-12,14 are maintained. The rejection is repeated below for convenience.

With respect to claims 1-5,8-10,12,14, Inoue et al. teach a PEM fuel cell stack comprising a plurality of fuel cells, a gel sealant, and retaining portions (28,30) which are formed on the separators between which the sealant (S) is interposed. See Figures 2,6; Paragraph 18.

With respect to claims 6,7, Inoue et al. teach the spacing portion can be part of the separator (28) or be separate from the separators (30). See Figure 2.

With respect to claim 11, the retaining portion is formed concave toward the sealant. See Figure 2.

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4. The claim rejections under 35 U.S.C.102(e) as being anticipated by Suenaga et al. (US 2002/0051902 A1) on claims 1-6,8-11,14 are maintained. The rejection is repeated below for convenience.

With respect to claims 1-5,8-10,14, Suenaga et al. teach a PEM fuel cell stack comprising a plurality of fuel cells, a sealant selected from an elastomer type or a thermoplastic elastomer type, and retaining portions (31,41) which are formed on the upper and lower dies (30,40) between which the sealant (10A) is interposed and adhered to the electrolyte membrane (23). See Figure 1E; Paragraphs 19,37.

With respect to claim 6, Suenaga et al. teach the spacing portion can be part of the upper and lower dies. See Figure 1E.

With respect to claim 11, the retaining portion is formed concave toward the sealant. See Figure 1E.

5. The claim rejections under 35 U.S.C.102(e) as being anticipated by Inoue et al. (US 6,872,485) on claims 1-6,8-11,13,14 are maintained. The rejection is repeated below for convenience.

With respect to claims 1-5,8-10,14 Inoue et al. teach a PEM fuel cell stack comprising a plurality of fuel cells, a sealant selected from the group consisting of a rubber, a resin or a composite material of a rubber and a resin, and a retaining portion which is formed on a separator (30) between which the sealants (10) is interposed. See Figures 6,7,10, Example.

With respect to claim 6, Inoue et al. teach the spacing portion is part of the separator (30).  
See Figures 6,7,10.

With respect to claim 11, the retaining portions are formed either concave or convex toward the sealant. See Figure 10.

With respect to claim 13, the two components are a separator and an electrolyte membrane. See Figure 10.

### ***Response to Arguments***

6. Applicant's arguments filed on December 28, 2006 have been fully considered but they are not persuasive.

*Applicant's principal arguments are*

*The references do not disclose "a sealant which is made of a material which maintains an initial material state even under an environment where the fuel cell unit is used, the material being selected from a gel material, high viscosity material and pressure-sensitive adhesive material" as stated in claim 1.*

In response to Applicant's arguments, please consider the following comments.

The term "material state" is understood as material properties pertinent to chemical structure, chemical resistance, physical strength and viscoelastic rigidity. None of the reference discloses the changes in material state after the fuel cell unit is used. Therefore, the claim rejections based on Inoue, Suenaga and Inoue, respectively, are proper and thus maintained.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan  
March 8, 2007

A handwritten signature in black ink, appearing to read "Dah-Wei D. Yuan", with a stylized flourish at the end.